

Ergonomics demonstration project: Roofing

Need

Roofing is one of the 12 high-risk industries for musculoskeletal injuries in our state. Employers in the high-risk industries, including roofing, are required to complete ergonomics awareness education and hazard analysis (if needed) by July 1, 2002 if they have 50 or more FTEs and by July 1, 2003 if they have fewer than 50 FTEs. Hazard reduction to the degree economically and technically feasible must be completed one year later.

Goals

The goals of the demonstration project are to:

- Define major roofing activities and hazard zone risk factors for roofing operations by task.
- Develop a list of technically feasible solutions, in conjunction with roofing contractors, that identifies possible hazard zone risk factors and options for mitigation for all major roofing tasks.

Project design

Removing old and installing new roofing can be extremely physically demanding. The group assumed that most field jobs in roofing would at least be in the caution zone, requiring awareness education and further hazard analysis. Using this assumption, the group focused its time on the hazard zone analysis and identification of intervention strategies. An initial review of tasks and ergonomic hazards in roofing by Everett (1997) helped narrow the tasks and risk factors to those likely to be in the hazard zone. These tasks were then observed in the field by an ergonomist and videotaped for brief video analysis to determine whether they were likely in the hazard zone for a particular risk factor. This analysis provided detail to the risk factor levels, but it was recognized that differences could occur over time, across companies and at different sites.

Ideas for reducing hazard zone risk factors were solicited from contractors, employees on sites, equipment manufacturers, and L&I ergonomists. Brainstorming and discussion of possible interventions were conducted at ergonomic committee meetings for each task and risk factor identified as a possible hazard. Additional input was received through a questionnaire sent to business owners by an Independent Business Association representative, listing tasks and risk factors, with space for solution ideas. Many technically feasible, low-cost solutions were identified through this process. In most cases, several acceptable solutions were identified which could reduce the risk factor level below the hazard zone. In these cases, as in any task, it is the decision of the employer and/or employees to choose which solution will work the best for their particular situation.

Timetable

January 2000Began initial discussions and initiated evaluations
November 2000Completed draft report on findings
September 2001Continue discussions on development of a hazard identification and control checklist

Results

- Hazard zone risk factors by major roofing task were identified through focus group discussion and on-site analysis with agreement from participating contractors.
- Possible solutions were developed through participant contractor brainstorming, review of construction solution applications, and a contractor questionnaire. Most solutions represent good practices already in place by some contractors.
- A draft report identifying hazard zone risk factors, and technically feasible solutions for mitigating hazard zone risk factors by major roofing task was completed in November 2000.
- Remaining tasks to address in this project include: a) lifting hazards during roof loading, b) risk factor mitigation for hot mopping, and c) obtaining feedback on the draft report and completing the final report.